

Saint Paul ATARI Computer Enthusiasts



An independent computer user group

M A R C H 1 9 8 6

This month's meetings:

SPACE

FRIDAY, MARCH 14, 7:30 PM

MAST-SIG

FRIDAY, MARCH 21, 7:30 PM

At the Falcon Heights Community Center
2077 Larpenteur Ave. W.

Bruce Haug...President 774-6226

Bob Rhode....Editor 222-3593

Jim Schulz...Vice-Pres 537-5442

Bob Siede....Treasurer 489-3982

Frank Haug...Disk Lib. 774-6226

Bob Floyd....Secretary 487-2627

Jim Siede....Paper/Educational Librarian 489-3982

SPACE/TAIG Bulletin Board...473-2897

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by JOE DANKO

WORLD USERS NETWORK January Report
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from WAACE

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by STUART J. DIMON
from SLCC

BYTES FROM THE PRES

Well I hope you liked Todd Burkey's demo of the programs he wrote--I know that I am going to purchase one of them that I forgot he had, until I saw his demo, at last month's meeting. The two programs I do own of Todd's are used each and every month.

March is here and the D.O.M. should start getting better. It seems that everybody works on their programs during the Winter, and when Spring and Summer comes along, the quality of the D.O.M. programs goes up. Have you turned yours into Frank yet, our D.O.M. librarian??

This month we are going to have a quick review of how a modem works, and a demo of how some of the local BBS's work -- maybe there are a few short cuts that you know about, and the rest of us don't. Come to the meeting and tell us about them. All the demo's will be on local BBS's, that have free access. Come and see a new approach to demo's. You will be asked to fill out a short question / answer sheet on how good or bad the new and different way to present demo's is, (not on whether you like BBS's or not). You will not have to sign your name to this, so come and speak your piece!!

The following information is on upcoming software for the 8-Bit ATARI:

In 1986, Electronic Arts promises to release Adventure Construction Set, Heart of Africa, Mail Order Madness, Racing Destruction Set, Skyfox, Software Golden Oldies (Software Country), and Ultima IV (Origin Systems), for the ATARI XL-XE 8-Bit line of computers. See those letters did do some good. Well, that's about it for the 8-Bit news. Look in the back, and see what I have to say about the MAST SIG MEETING, our FIRST!!

THE PRES.

February SPACE Meeting Minutes
by Bob Floyd

The last SPACE meeting was held Friday, February 14, 1986. President Bruce Haug opened the meeting with an explanation of the organization of the new SPACE ST special interest group, MAST (Minnesota ATARI ST). There were no 8-bit rumors to report. Jim Schulz, the vice president, reported on the new 65XE and 130XE packages that ATARI is now offering - \$399 for 130XE with mouse (yes, a mouse!), printer, disk drive and 5 software titles. The 65 XE version is \$50 to \$100 cheaper. Jim reported that most of the 800XL's have been sold, so the 65XE is now replacing it.

Bob Floyd reported that the 7800 prosystem game machine (\$80) is to be released, as well as an updated version of the 2600 game machine.

Bob Siede, the treasurer reported a balance of \$849 and 101 members. The balance is down a little due to the new color monitor and ribbon re-inker.

The newsletter will now be larger and printed on lighter weight paper. The paper library received "Starting Forth" and "BASIC on ATARI Computers for Kids". The BBS is having its ups and downs - apparently mostly ups. A SynCalc Minnesota tax template is on the current DOM. The new Zenith monitor was used for the first time at this meeting and was very sharp. The ribbon re-inker arrived and Larry Vandenplas volunteered to take care of re-inking ribbons for the club - more on this at the next meeting. The 1020 color plotter is available mail-order from Electronic One for only \$20. The power supply and I/O cable are worth double this price. Todd Burkey demonstrated his software programs - Ultracopy, Diskedit, Cartdisk Plus, and Softbase.

D.O.M. News
Frank Haug

Well, I hope all of you have been working hard at programs for the DOM. You all have, haven't you? ...I thought so. Anyway, this month's disk will contain two of the infamous Atari demo's. Unfortunately, not all of the titles will be put into the N-L this time (sorry about that), but the DOM will contain a member written program for the 1020. (I told you that members can write programs, didn't I?)

We will also sell a double-sided "movie" disk for six dollars. The disk contains movies made with MovieMaker (which, apparently, none of you have. If you don't know what I mean, read some of the past articles on the DOM.)

March DOM 1986

1. FUJIBOINK.COM - An ATARI original.
2. BOINK.COM - A demo shown on some other machine whose name escapes me.
[It better! -ed.]
3. ROTPRT.BAS - A utility for use with SYNCALC and the 1020, allows you to put templates on a 8 1/2" x 11" paper....(Yes, this is the donated one.)

There will be more programs on the disk!!

Weinberg's Law

If builders built buildings the way programmers write programs, then the first woodpecker that came along would destroy civilization.

MAST VIEWS & NEWS

ANALOG D.D.M.

Bob Floyd

Well I feel the first MAST ST-SIG meeting of S.P.A.C.E. was a success!!! 27 people attended, and that was without advertizing. Just word of mouth!! This month we are listed in the TC Computer User, and on quite a few local BBS's. This doesn't mean you should stop telling your friends about our meeting. The more people that attend, the more information everyone gains.

Welcome, to the new members who joined S.P.A.C.E. I hope you enjoyed our meeting, and can contribute your questions and answers. In general everyone gains more knowledge on ATARI, by questions being asked.

Hopefully the MAST ST-SIG members will review 520-ST programs in this newsletter, and the ST-Section of the newsletter will grow. See you at the next ST-SIG meeting on the 3rd Friday of March, the 23rd.

Bruce Haug, SPACE PRES.

February MAST Meeting Minutes

by Bob Floyd

The last (and first) MAST meeting was held Friday, February 21, 1986. President Bruce Haug opened the meeting with an explanation of the organization of the new SPACE ST special interest group, MAST (Minnesota ATARI ST). He appointed Bob Floyd and Jim Schulz to co-chair the group. Scott Hutchinson volunteered to be membership chairman.

Jim Schulz reported that the 1040ST's and modified 520ST's have arrived at ATARI from Japan. These include RF and composite color outputs and apparently work in both low and medium resolutions.

Jim reported the following rumors: There will be CPM and Macintosh emulators. He said that over 10,000 copies of DEGAS have been sold and that Hippo is selling lots, too. There are over 150 titles available now with another 100 due by the end of March. Two new BASIC languages are now available. Unix is due soon. There will be a battery-backed clock cartridge available and an IBM-PC emulator (hardware plugs into DMA port), too. The 20 meg hard disk will be out in mid-April for \$799. It has an on-board co-processor. An expansion box will be available shortly for \$75. A new version of ST BASIC is on the way. The ROM's are on the way and show better desktop colors (supposedly for the new RF signal clarity). A 68020 and graphics coprocessor are rumored for the ST (see March issue of Byte). The TT is due in late '86. It will feature 1024x1024 resolution in 16 colors. It will use the ST as the driver.

Todd Surkey, Mindtools Inc., is offering to let MAST members use his ST bulletin board. The phone number is 542-8980.

There were demos from the disk of the month, VIP Professional, Solitaire/21, King's Quest II, Sundog and Easy Draw.



I will have the March, 1986 (#40) Analog Computing disk for sale at the meeting. Price is \$4.00 each for registered Analog subscribers only. You must also be a SPACE member. I am enforcing this rule now with no exceptions. Here is a list of persons who need to (re-)register their subscriptions with me. You must bring a current issue showing your name on the mailing label. Also listed are those who need to pay up their SPACE membership. If you want to be dropped from the list, please let me know.

3 Jesse Fleury	1 Arnold Pagel
2 Curtis Gibson	2 Robert Pechman
3 Brad Jones	2 Donald Overland
1 Steve Kenner	2 Susan Richter
2 Kris Kruger	

1 = overdue subscription

2 = overdue membership

3 = both

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WORDS FROM THE CHAIR

by Bob Floyd

See the Chair Talk! - This is the first installment of, for lack of a better idea, "Words From the Chair". "Words" are bigger than bytes, so this fits the ST image better, and, "chair" because I am now a co-chair of the MAST special interest group of SPACE. I really don't have too much news to cover this month, because Jim Schulz (the other co-chair) covers the news so thoroughly at the meetings. (In other words, you should come to the meetings for the latest info.) So, this column will usually be fairly short.

First Meeting - There were 27 persons at the first ever meeting of MAST on February 21, 1986. From these, we got 5 new SPACE/MAST members. This is a very good turnout for a first meeting. I expect our numbers to double within a month or two.

Disk of the Month - For the two MAST disk-of-the-months for February go incredible thanks to a Herculean effort by Jim Schulz. I'm sure you can't find public domain disks anywhere that are as nice as the ones Jim prepared for MAST. Can you believe there was an average of 44 files per disk, and only for \$5.00 per disk? Jim also was selling the new version of TOS with 23 useful desk accessories and utility files for \$5.00. Plus, all of the files are documented with "READ.ME" files within each folder, plus a "DISKINFO.X" file for the overall disk. Jim has done a tremendous job on these disks and should be congratulated. (P.S. You can also buy MAST disk of the month's from previous MAST meetings during the SPACE meetings. See Frank Haug.)

Membership Chairman - Many thanks to Scott Hutchinson for volunteering to handle MAST membership duties. I'm sure his efforts will be greatly appreciated in the months to come.

MAST ANALOG Disk - I would appreciate it if those of you who own ST's and subscribe to "ANALOG" magazine would register with me (or let me know who you are). Then, when the time is right, we can get a club ST disk subscription.

Mindtools - Many thanks to Todd and Steve (Mindtools, Inc.) for lugging an extra 520ST to the MAST meeting so we could have demos. We wouldn't be able to have an ST at the meeting otherwise.

A Little News - Yes, the ROM's are here - I have a set! I'm also getting a 1 meg upgrade from LR Data, Inc. which I'll be able to report on at the meeting. The CPM emulator is now being discussed as a real product and rumor has it that MAST may get hold of a rather large library of public domain CPM programs - more on this when I know more. Also, some good news and bad news. The good news is that IBM was beat out by Zenith for the IRS laptop computer, a very large potential purchase. The bad news is that the Zenith uses 5.25" disks (the IBM was rumored to be 3.5"), so the emergence of IBM software on 3.5" disks may not happen for some time. So, if and/or when the IBM emulator for the ST appears, there may not be too much IBM software to run unless you buy a 5.25" drive for your ST.

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EAR TO THE GROUND

by Bob Rhode

People, this is YOUR column. That's right, this is a brand new column I'm trying. EAR TO THE GROUND is going to be just what it sounds like (ha-ha); perhaps I should have called it EYES PEELED. What I want from YOU is any interesting tidbit of information you might have run across since the last meeting. Here are a couple examples:

The 1040ST is on the cover of the March issue of BYTE, and is the subject of a very favorable feature story.

ELECTRONIC ONE is still selling 1020 color plotters for \$19.99; see their ad in Antic and Analog for more.

There's a new price-busting name in mail-order house called Black Patch Systems, who claims to beat any price. While this may be overly boastful, with TYPESETTER for \$20, it may be worthwhile to check them out. I found their ad in Antic.

Apple has joined the 1 Meg market with Mac PLUS (Popular Science, April), aimed at the businesses at \$2600. It still comes in B&W with one 3.5" disk, with optional 20M hard disk. Thanks, but for my 2.6 Kilobucks, I'll buy TWO COLOR 1040ST's.

ELECTRONIC ARTS is offering FREE SOFTWARE. Buy one, get one free - of your choice! Ads in many major mags.

Well, folks, here is your creative outlet. No news item too small. This is your chance to participate from the safety of your telephone; you can see your name in print without even having to write an article!

If you have seen something you'd like to share, give me a call at 222-3593.

THE ATARI 800XL
by Joe Danko

Quarter-Meg memory upgrades for the XL.

Using my ATARI 400 and 800 was getting to be a little too routine and tedious since we had to split up our two disk drives. We couldn't think up a good reason to buy an 800XL or a 130XE until I saw the September issue of BYTE magazine with the homebrew 256K upgrade to the 800XL. I had done the homebrew 16K to 64K upgrade in my 400 but this sounded like it would be easier and a lot of fun.

I downloaded the ramdisk software from the BYTENET BBS, assembled it with MAC65, got my chips together and after about 2 days casual hacking it was working as expected. Then I realised that it was not compatible with the 130XE. Instant obsolescence.

My next move was brought on by a fit of impatience and laziness. I ordered a kit from NEWELL INDUSTRIES that came with a modified MYDOS that allowed near 130XE compatibility and flexible ramdisk configuration. It was ok but still not 100% 130XE. I removed that and installed another homebrew that worked well and allowed the use of a lot of exotic ramdisk software I downloaded from COMPUSERVE and the CHAOS BBS in Michigan. Unfortunately, the NEWELL upgrade couldn't run most of this s/w and the new homebrew kit would not run MYDOS.

About the time that I was starting to build yet another homebrew 256K upgrade that I found on the CHAOS BBS I was saved by Chris Tiggemann. He had just completed prototypes of his own version and asked me if I would do some beta-testing. The one from CHAOS sounded good but I am glad I used Chris's.

Chris has come up with a very simple and elegant design that really works. He is using a high-tech device called a PAL chip that drastically cuts down the number of chips required. It is very small and fits inside the 800XL very nicely after the capacitors are bent over. The only improvement I would suggest is to have the connecting wires all pre-soldered to the board. I had a tricky time connecting the 10 wires to the board due to the close spacing of the circuit foils.

I installed the 128K/256K selector switch in back after drilling three holes. I used a rather stiff slide switch to prevent accidental switching.

My 800XL is now 100% 130XE compatible in the 128K mode and mostly compatible - as well as being capable of a lot more - in the 256K mode.

I have been using one particular ramdisk handler a lot. I downloaded it from the CHAOS BBS in Michigan. It allows the most flexibility. It is merely a modification to the 'RAMDISK.COM' program that is normally used with DOS 2.5 on the 130XE. With this procedure and the EDITOR-ASSEMBLER CARTRIDGE or any other debugger that allows instant reassembly the 'RAMDISK.COM' file can be reconfigured for one ramdisk, 'DB' = 720 sectors and another 720 sector ramdisk setup for 'D2,D3,D4,D5,D6, or D7'. This does not conflict with most 'AUTORUN.SYS' files and will also work most of the time with the 'DISKIO' utility from

ANTIC. In conjunction with DISKIO it is very nice if you have a one disk system and need to manipulate a lot of files.

Another good handler is from COMPUSERVE by Claus Buchholz. It is an AUTORUN.SYS file that only works with DOS 2.0s and sets up two 720 sector ramdisks as D3 and D4. This will usually work where the previous handler will not or where DOS 2.0s is required. There are a whole bunch of ramdisk routines on COMPUSERVE and I have downloaded most of them as well as a bunch from CHAOS BBS. A few of them just flat don't work but a person can probably find one to configure the extra 192K of memory just about any way you would want.

The special version of MYDOS that I recieved from NEWELL IND. sets up a ramdisk as any number disk you want but only as 1522 sectors which causes some problems.

Now that I have stabilized my hardware and seem to be getting into some applications where I can actually use it, I will be going back to check out all of the various handlers and, hopefully, I will be back next month with some specifics. If possible I will collect enough stuff that actually works to fill up a disk to put in the library.

So far, I have successfully used the ramdisks with my modem and '1030 EXPRESS', with MAGIC WRITER, SPEEDSCRIPT and FLEET SYSTEM 2 word processors and with the new SPEEDCALC spreadsheet. Best results are usually seen when used with software that runs with DOS.

=====

W.U.N. January Report

Joe Waters - Chairman,

World Users Network

=====

October. As many of you know, in October ANTIC passed control of its World Users Network into the hands of the user group representatives. I was chosen to be temporary chairman and Frank Nagle, of the Bay Area Atari Users Group, was chosen as vice-chairman.

November. Since COMDEX was slated for November and several of the MUN representatives were going to be in Las Vegas, we thought we might forego the awkwardness of an online conference and simply meet in person. Those of you who have participated in online conferences will readily understand how much more can be accomplished by face-to-face communications.

The Las Vegas meeting was attended by Dave Duberman, the (now-ex) Atari User Group Coordinator, Frank Nagle, myself, and Jack Durre of the Dade Atari Users Group of Miami, Florida. The purpose of the meeting, besides getting to meet each other, was to begin the discussion as to just what MUN should be.

We did not arrive at any definitive decisions, but the consensus was that whatever MUN was going to evolve into, it's primary function should be to serve the inter-

ests of Atari User Groups around the country. Let me expand a moment on this theme.

At the "meeting" level, an Atari User Group is primarily a social institution. It's a place where people can get together, meet kindred souls, talk and learn about this machine they love so much, and, in general, just have a good time. There isn't much of a role for MUN here. Each individual user group will know what its constituent members want to do and will be able to act accordingly.

Besides the basic social function of holding meetings, there are other services a user group can provide for its members such as building a library of public domain programs, publishing a newsletter, or running a bulletin board system. These services, however, all entail a significant expenditure of money and often are beyond the reach of small clubs. Larger clubs, or small clubs that have banded together to enjoy the benefits that economies of scale bring, can and do provide such services. Nonetheless, here is an area where, perhaps, MUN could be of assistance to the clubs. It is very difficult to build a "quality" library and editors are constantly crying out for input. Perhaps MUN could serve as a central distribution point where high quality public domain software or "shareware" could be provided to clubs for distribution to their members as they see fit. Or maybe something could be done to help the struggling club editors around the country.

If this view of MUN, as an organization designed to serve the interest of member clubs, which, in turn, are working to serve the interest of their members, can be successfully implemented, then perhaps we can provide sufficient incentive for clubs throughout the country to WANT to join the organization. And, IF clubs do actively join and support the organization, then and only then will we be in a position to turn around and look in the other direction at Atari Corp. and other commercial interests involved in the Atari market.

With sufficient user support, we should be in a position to convey to Atari and other manufacturers the attitudes and desires of users and thus, perhaps, influence decisions. Note that our ultimate power over Atari and other manufacturers lies way back down at the roots of the organization. Users can decide to buy or not buy a product. In the last analysis, therefore, it is the marketplace that determines success or failure of any enterprise. It is ludicrous to imagine that we, as a "Board", can vote on something and expect any commercial interests to be bound by anything we say. The best we can hope for is to provide a clear and accurate representation of what Atari users want and thus, hopefully, prevent Atari or other developers from making a serious mistake.

All of the above just goes to provide a broad general outline of what we would like to see MUN evolve toward. How are we going to get there? In this industry, I can assure you, it won't be by any long-range plan. The industry is simply changing too much and too fast to waste any time worrying about MUN two or three years down the road. I have always felt that the best way to get from point A to point B is simply to step forward and start

walking. With each step we will get closer to where we are going. By also keeping our eyes and ears open as we march along, hopefully, we will keep going in the direction you, the Atari users, want us to go.

December. With Christmases complicating everyone's normally hectic schedules, no meeting was slated for December.

January. As January rolled in, the holidays were now behind us and it was time, once more, to go to work. MUN Board meetings are scheduled for the second Thursday of each month (10:00 p.m. EST) as an online conference in the AtariSIG on CompuServe. Since CES was in progress on the second Thursday in January, the January meeting was delayed until the third Thursday. The user group participants included Frank Nagle (BAAUG), Jack Durre (DAUG), Rick Gierle (PACE), and myself (WAACE). Ron Luks and Dave Groves (AtariSIG SYSOPS) represented CompuServe, and someone (it was never quite clear who) represented ANTIC ONLINE. Normally, Neil Harris and Dave Duberman would be onhand representing Atari. However, Dave has found a new job and, we learned at the beginning of the meeting, that Neil was ill that day. In spite of his illness, Neil did join the conference later in the evening.

Three items were on the agenda: a MUN message base on CompuServe, selecting additional user group representatives, and establishing some "syndicated" columnists. Without providing a blow-by-blow description, let me summarize the results of our first real "user sponsored" conference:

MUN Message Base. CompuServe, as part of their support for MUN, has agreed to provide a MUN message base in the Atari SIG. As those of you who regularly use CompuServe know, the Atari SIG now has three major elements: the 8-bit forum, the 16-bit forum, and a developers forum. If you choose the developers forum, you will see six available message bases. Some of these are really meant for developers who are working on products and need technical assistance and, in fact, access is restricted to authorized developers only. However, the fifth message base has been allocated to the World Users Network. It is available to everyone not just board members. Feel free to visit, see what topics are under consideration for board action, and add your own comments and feedback. With this message base available, there will be ample opportunity to debate issues and procedures without having to restrict all actions to a once-monthly online conference.

Board Membership. There is room to provide positions for more user representatives on the MUN board of directors. But how do we decide who should be on the board? In setting up MUN, ANTIC had divided the country into 12 geographical regions. Do the regions accurately represent the national distribution of Atari users? Should we have a member from each region? I am not sure of the answers to the above two questions, but I do think that anyone who can speak for a sizeable chunk of Atari users (say, a 1,000 or more) deserves to be heard. If your club is not big enough by itself, why not get together with other clubs in your area so you can have a regional representa-

tive? Rather than sending out a mass mailing to all clubs in the country to determine who is interested, it is easier for us to ask interested clubs to contact us, via the MUN message base, and make your own case for being on the MUN board of directors.

The MUN-Line. There are literally hundreds of club newsletters published around the world. If there is one common thread I see in many of these newsletters, it is the difficulty editors sometimes have in filling up all those pages every month. ANTIC ONLINE has provided an invaluable service for many editors by offering timely and informative news reports that clubs can download and include in their newsletters. Anyone who has been able to observe the contents of newsletters from around the country can attest to the popularity of ANTIC ONLINE.

Why not provide newsletter editors with a much broader selection of material that could be available for reprinting in their local newsletters? If one is lucky enough to be able to follow the many fine Atari newsletters published each month, you will notice here and there some truly excellent reviews, tutorials, and commentary. Virtually all of these are available for reprinting. However, it is a major task for a harried editor to have to retype selections. If only they could be, somehow, provided in electronic form....

They can. In the Developers Forum of the Atari SIG on CompuServe, the download section corresponding to the MUN message base will be used to house the MUN-LINE. The MUN-LINE will contain minutes of MUN board meetings, my summary reports as chairman, press releases and official statements from Atari, and a wide selection of columns, articles, reviews, and tutorials from the Atari newsletters around the country. Anything posted in the MUN-LINE is available for reprinting in club newsletters. Editors: when you find an article that you think would be of wide interest to other editors, feel free to upload it to the MUN-LINE.

Atari Says.... There is one more element that was introduced at this meeting, although not quite finalized yet. Some of you may have noticed that very often you hear conflicting reports about what is or is not going on at Atari. Quotes may come from this or that Atari official and it is not unprecedented that these statements sometimes contradict each other. What does Atari Corp. have to say? We would like to use the monthly MUN board meeting to provide Atari with a forum where they can release "official" policy statements and be assured that the word will be spread quickly and efficiently around the country. Maybe next month, I'll have more to report on this item.

February: The next MUN Board of Directors meeting will be held on Thursday, February 13, at 10:00 p.m. EST. The conference is held on Channel 5 which is restricted to MUN board members. However, anyone who wants to say "listen in" by tuning into Channel 30 and, once there, typing "/MON 5". This will allow observers on Channel 30 to monitor the board meeting while still allowing them to make comments and observations to each other without interrupting procedures.

ST Sound Tutorial

STEWART J. DIMON

SO THAT'S WHAT THE ST SOUNDS LIKE!!!

If you have taken the ST plunge, as have, I am sure that one of the first programs you typed into ST Basic went something like this:

```
10 FOR A = 1 TO 3
20 SOUND A,10,6,6,100
30 SOUND A,0,0,0,0
40 NEXT A
```

Weren't you disheartened to discover that this ONLY worked the first time through, that is, it seems that ST Basic has some BUG that only allows the first sound channel to be addressed.

Turning a few pages back in the ST-Basic manual, we see a rather cryptic command, WAVE. Looking at the list of parameters reveals that the first one is titled ENABLE (our FIRST clue). Not only does this enable the WAVE command, but this must be set prior to any calls to the SOUND statement. Despite what the manual says, to enable a sound channel, we need to set the bits (0-2) to a value of 1 (not 0). To do this, the following chart should be used:

TO ENABLE CHANNEL(S)	SET ENABLE VALUE TO
1	1
2	2
3	4
1 + 2	3
1 + 3	5
2 + 3	6
1 + 2 + 3	7

Note, this sets the appropriate channel(s) to their "musical" mode. The sound chip has another mode. You can incorporate "noise" (sounds like a background HISS) along with any/all of the sound channels if you desire. For this, assign ENABLE the following values:

NORMAL	NOISE	ENABLE VALUE
		EEENNNXX *
		123123XX
	1	8 (00010000)
2	1	10 (01010000)
3	1	12 (00110000)
2 + 3	1	14 (01110000)
	2	16 (00001000)
1	2	17 (10001000)
3	2	20 (00101000)
1 + 3	2	21 (10101000)

-----	3	32 (00000100)
1	3	33 (10000100)
2	3	34 (01000100)
1 + 2	3	35 (11000100)
-----	1 + 2	24 (00011000)
3	1 + 2	28 (00111000)
-----	1 + 3	40 (00010100)
2	1 + 3	42 (01010100)
-----	2 + 3	48 (00001100)
1	2 + 3	49 (10001100)
-----	1 + 2 + 3	56 (00011100)

*E=Enable. N=Noise Enable. X=Not Used

The next parameter determines if you wish to set up a waveform for a channel, or if you are satisfied with it being a square wave (full volume while on, no volume when off, nothing in between). The settings are identical to those used for ENABLING a sound channel (that is, values from 1..7). If a channel is NOT setup as a WAVEFORM channel, and it is enabled, then the default state is for a square wave.

The third parameter is the SHAPE parameter. According to the Basic manual, setting bits 0..3 causes something to happen. I have experimented on numbers in the range 0..15 (as parameters), and have found that there are QUITE a variety of sounds that this chip can produce. Most of the sounds are very similar, there are subtle differences regarding the attack (initial) volume. Some values start at full volume and decay to nothing, others start at nothing and "swoop" to full volume. Some settings cycle between high/low volumes, some are in repeated patterns, others sound only one time/call. (See detailed listing in file WAVE.TXT on the ST-Basic DOM).

Try experimenting around with different values. These will sound different depending on the setting of the fourth parameter, the PERIOD parameter. The period parameter sets the amount of time (in WHAT I am not sure, it is (of course) NOT documented), that it takes for the WAVE to cycle through one complete tone. This may be a POSITIVE unsigned integer value (0..65535), the larger the number, the slower the decay cycle. Through a combination of this and the SHAPE parameter, you will be able to create (almost) any sound pattern you wish, provided that it exists within the sound chip.

The fifth (and final) parameter to the WAVE command is the TIME parameter. This (like the 2nd through the 4th parameter) is optional, and if employed, will create a fixed length delay, during which time, processing of the program comes to a halt. This figure is in 50ths of a second (approximately), so a value of 50 will "delay" the processor for (approximately) 1 second.

Following are a few simple programs that will allow you to experiment with the sound command. They are intended ONLY to demonstrate the power of the sound/wave command.

The first program plays a broken chord (so that you can HEAR that there are THREE separate channels). It plays in 4 different octaves. (On ST Basic DOM as SNDTEST.BAS)

```

10 WAVE 7,7
20 FOR Y=3 TO 6
30 SOUND 1,10,1,Y,9:SOUND
2,9,5,Y,9:SOUND 3,8,8,Y,25
40 SOUND 1,0,0,0,0:SOUND
2,0,0,0,0:SOUND 3,0,0,0,0
50 NEXT Y
99 END

```

The next program, demonstrates some of the sounds that are available to you. It is a fixed tone (spread over 3 octaves for clarity), and the current SHAPE and PERIOD values are displayed in the output window. (On ST Basic DOM as WAVER.BAS)

```

10 FULLW 2
20 CLEARW 2
30 FOR SPE = 1 TO 31
40 FOR PRD = 1 TO 10001 STEP 1000
50 PRINT "The current shape is ";SPE;"
Period is ";PRD
60 SOUND 1,1,1,3,0:SOUND
2,1,1,4,0:SOUND 3,1,1,5,0
70 WAVE 7,7,SPE,PRD,75
80 NEXT PRD, SPE
99 END

```

The last sample program, allows you to specify the SHAPE, PERIOD and TIME (if any) for a particular fixed note. This allows you to experiment and find that sound that is "JUST RIGHT!!" (On ST Basic DOM as WAVEFORM.BAS)

```

10 INPUT "Enter SHAPE (0..31) ";SHAPE
20 INPUT "Input PERIOD (0 to STOP)
";PERIOD
30 INPUT "Input DELAY (0 is OK)
";DELAY
40 IF PERIOD <> 0 THEN SOUND
1,1,4,5,0:
WAVE 1,1,SHAPE,PERIOD,DELAY:GOTO 10
99 END

```



"Look at me where
I'm programming you!"
HEART TO HEART LIFE

THE PADDLE CONTROLLERS

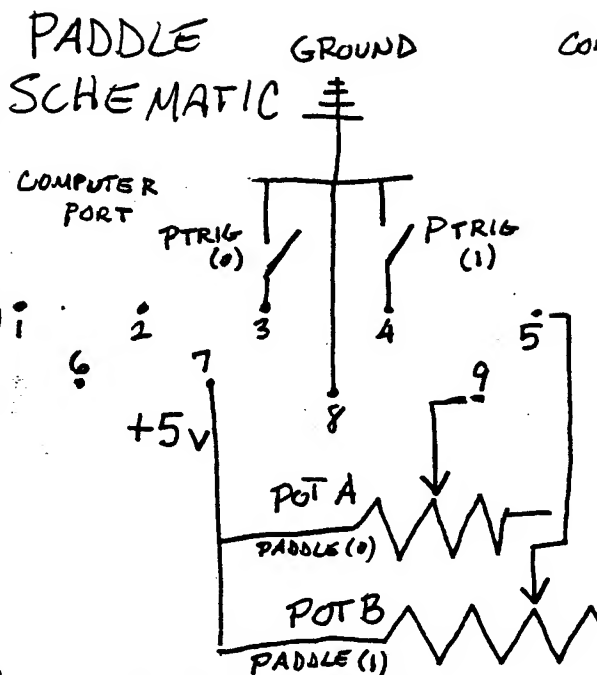
by Bob Rhode

I am sure I am not the only would-be hardware hacker out there who is blown away by the complexity of many of the schematics for hardware modifications. Fact is, I'm too young to have an engineering degree.

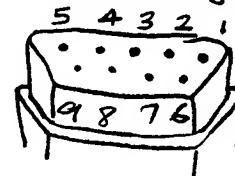
That doesn't mean I can't have fun, too. I have always been intrigued by the joystick ports, especially the oft-ignored paddles. So now that I have started playing with them, I thought I'd share what I've learned.

As the schematic shows, pins 1,2&6 are unused. 3&4 are the paddle triggers for players 1&2 respectively, as well as being left and right for the joysticks. That's right; try controlling the horizontal movement of any joystick game with the paddle buttons. It works! Both of these connect to 8, the ground, when closed.

Pin 7 is +5 volts, and both 9 and 5, pots A and B get their power from it. "Pot" is short for "potentiometer", which is a variable resistor, like a dimmer switch on a light. It varies the voltage in the circuit. The pots in the ATARI paddles are 1 Megohm. Each pot has 3 terminals. You only use the first two. When you use all three, you have a rheostat, which controls



CONTROLLER CORD PLUG

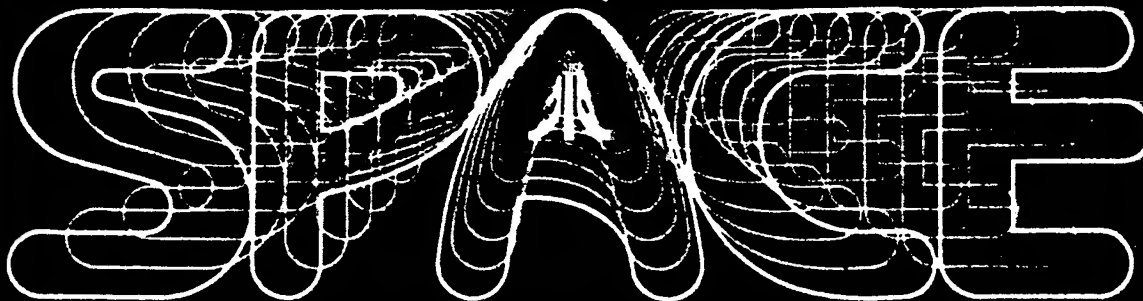


the amperage. The values of PADDLE (0) and PADDLE (1) reflect the voltage that passes through the pots and into pins 9 and 5. You will get a value from 0 to 228, 0 being no resistance (all the way to the left), and 228 is infinite resistance, or no voltage is getting through.

Now, just because I'm the editor doesn't give me special privileges. If any one of you should give me a similar article, I can all but guarantee that you will see it in the next newsletter. I would like very much to print anything and everything I receive from a member. You ARE the club, and your knowledge is more precious to me than the wisdom of ATARI's foremost engineer. Please, share your talents with us.

ST. PAUL ATARI COMPUTER ENTHUSIASTS
BRUCE HAUG, PRESIDENT
1697 E. HOYT AVE.
ST. PAUL, MN, 55106
(612)774-6226

Saint Paul ATARI Computer Enthusiasts



An independent computer user group

SPACE is an independent user interest group of owners of ATARI Home Computers. It has been organized by local owners of ATARI computers for the purpose of mutual self assistance and sharing of information. It is open to all interested computer enthusiasts.

The group has recently changed meeting time and location to accomodate the recent influx of new members. SPACE now meets on the second Friday of each month at the Falcon Heights Community Center, 2077 West Larpentour, at 7:30 pm. Meeting time and location can be confirmed by calling one of the officers listed below.

MAST is a SIG (Special Interest Group) of SPACE, and is intended for the owners of the new ATARI 520ST, information on other ATARI computers is not discussed at MAST meetings. There is no additional membership fee to become a member of MAST. The MAST NEWSLETTER is part of the regular SPACE Newsletter and is mailed to your home each month before the meeting date. MAST meets the third Friday of the month at the same above location and time.

Benefits of membership include software demonstrations, group purchases at substantial discounts, group projects, public domain disk of the month software at very low prices, book library, new educational software library with over 20 programs, personal contacts / learning, greater information/awareness on the world of ATARI, software at discounted prices from dealers at meetings, Question & Answer Session, etc. Come to a meeting to find out more.

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